



# ANTIBIOTIC RESISTANCE

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# Facts about Antibiotic Resistance

- Antibiotic resistance has been called one of the world's most pressing public health problems.
- The number of bacteria resistant to antibiotics has increased in the last decade.
- Many bacterial infections are becoming resistant to commonly prescribed antibiotics.
- Antibiotic resistance can cause significant danger and suffering for people who have common infections which were once easily treatable with antibiotics.

# Bacteria, Viruses, and Antibiotics

- Bacteria- single celled organisms found inside and outside our bodies, except blood and spinal fluid
- Some bacteria are harmful and trigger infections, while other bacteria are helpful
- Virus- smaller than bacteria and cannot survive outside the body's cells
- Viruses cause illness by invading healthy cells and reproducing

# Bacteria, Viruses, and Antibiotics

- Illnesses caused by viruses should NOT be treated with antibiotics
- Examples of viral illnesses include:
  - Colds
  - Flu
  - Most coughs and bronchitis
  - Sore throats
  - Some ear infections

# Bacteria, Viruses, and Antibiotics

- Antibiotics are also known as antimicrobial drugs
- Antibiotics treat only bacterial infections
- Alexander Fleming discovered the first antibiotic, penicillin, in the 1940's.
- The term 'antibiotic' originally referred to a natural compound produced by a fungus or another microorganism that killed bacteria which caused disease in humans or animals
- Some antibiotics are now synthetic and can either kill or inhibit growth of microbes

# What is Antibiotic Resistance?

- Antibiotic resistance is the ability of bacterial or other microbes to resist the effects of an antibiotic
- Resistance occurs when bacteria change in some way that reduces or eliminates the effectiveness of drugs or other agents designed to cure infections
- These bacteria survive and continue to multiply causing more harm

# Why are Bacteria Becoming Resistant?

- Every time a person takes antibiotics, sensitive bacteria are killed, but resistant bacteria are left to grow and multiply.
- Repeated and improper use of antibiotics increase the number of drug resistant bacteria
- Using antibiotics to treat non-bacterial infections (viral) promotes the spread of antibiotic resistance
- Using antibiotics appropriately is the key to controlling the spread of resistance

# Why Should I be Concerned?

- Resistant bacteria can quickly spread to family members, schoolmates, and co-workers.
- Communities are threatened with new strains of infectious diseases that are more difficult and expensive to treat
- Children and adults suffering from infections once treated with common antibiotics, are now at increased risk
- If microbes become resistant to many drugs, treating infections becomes difficult and sometimes impossible. These infections can lead to significant disability and even death



# Prevention

- Do not take an antibiotic for a viral infection like a cold or flu
- Do not 'save' antibiotics for use the next time you get sick
- Complete the prescribed course of treatment even if you feel better
- Do not take someone else's antibiotic
- If your health care provider determines that you do not have a bacterial infection, do not pressure your provider for antibiotics

# Parent Pressure Makes a Difference!

- For pediatric care, a study showed that doctors prescribe antibiotics 62% of the time if they perceive parents expect them and 7% of the time if they do not
- Antibiotics were prescribed in 68% of acute respiratory tract visits, and of those, 80% were unnecessary according to CDC guidelines

## Other Considerations

- Antibacterial containing products (soaps, household cleaners) are not proven to prevent the spread of infection better than products that do not contain antibacterial chemicals
- Hand-washing and cleaning shared items/surfaces is important in preventing the spread of infection
- Chronic use of antibiotics, such as for acne, can contribute to the development of antibiotic resistance. Short and long term use of antibiotics should always be under the direction of a physician to ensure appropriate use and to detect resistance

# Probiotics

- Probiotics are microorganisms that when administered in sufficient quantities may improve health
- The benefit of probiotics in preventing drug resistant bacteria in humans has not been established

# References

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